DECISION

ENVIRONMENTAL ASSESSMENT: MAMMAL DAMAGE MANAGEMENT IN TENNESSEE

PURPOSE

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program, in cooperation with the Tennessee Valley Authority (TVA), has prepared an Environmental Assessment (EA) to analyze the potential environmental and social impacts to the quality of the human environment from resolving damage, including conflicts and threats, to agricultural resources, property, natural resources, and human safety associated with mammals (USDA 2012). The EA documents the need for damage management in the State and assesses potential impacts on the human environment of three alternatives to address that need. The proposed action in the EA would continue an integrated methods approach to address the need to manage damage and threats associated with mammals.

Damage and threats of damage associated with the following mammal species were addressed in the EA: beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), nutria (*Myocastor coypus*), woodchuck (*Marmota monax*), gray squirrel (*Sciurus carolinensus*), fox squirrel (*Sciurus niger*), eastern chipmunk (*Tamia striatus*), pine vole (*Microtus pinetorum*), prairie vole (*Microtus ochrogaster*), meadow vole (*Microtus pennsylvanicus*), house mouse (*Mus musculus*), roof rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), eastern harvest mouse (*Reithrodontomys humulis*), deer mouse (*Peromyscus maniculatus*), white-footed mouse (*Peromyscus leucopus*), cotton mouse (*Peromyscus gossypinus*), rice rat (*Oryzomys palustris*), hispid cotton rat (*Sigmodon hispidus*), cottontail rabbit (*Sylvilagus floridanus*), black bear (*Ursus americanus*), raccoon (*Procyon lotor*), river otter (*Lutra canadensis*), long-tailed weasel (*Mustela frenata*), mink (*Mustela vison*), striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putoris*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), bobcat (*Felis rufus*), feral cat (*Felis domesticus*), feral dog (*Canis familiaris*), nine-banded armadillo (*Dasypus novemcinctus*), Virginia opossum (*Didelphis virginiana*), little brown myotis (*Myotis lucifugus*), silver-haired bat (*Lasionycteris noctivagans*), eastern pipistrelle (*Pipistrellus subflavus*), big brown bat (*Eptesicus fuscus*), evening bat (*Nycticeius humeralis*), eastern big-eared bat (*Plecotus rafinesquei*), eastern mole (*Scalopus aquaticus*), hairy-tailed mole (*Parascalops breweri*), star-nosed mole (*Condylura cristata*), feral swine (*Sus scrofa*), white-tailed deer (*Odocoileus virginianus*), and elk (*Cervus elaphus*).

The EA evaluated the issues and alternatives associated with WS' potential participation in managing damage and threats caused by mammals in the State, including properties owned or managed by the TVA. The EA was prepared by WS and the TVA to determine if the alternatives could have a significant impact on the quality of the human environment. Specifically, the EA was prepared to: 1) facilitate planning, 2) facilitate interagency coordination, 3) streamline program management, 4) evaluate the potential environmental consequences of the alternatives related to the issues associated with managing damage caused by mammals, and 5) clearly communicate to the public the analysis of individual and cumulative impacts.

NEED FOR ACTION

The need for action arises from requests for assistance received by WS to reduce and prevent damage associated with mammals from occurring to agricultural resources, natural resources, property, and threats to human safety. WS would only conduct mammal damage management after receiving a request for assistance. Before initiating activities, a Memorandum of Understanding, cooperative service agreement, or other comparable document would be signed between WS and the entity requesting assistance, which

would list all the methods the property owner or manager would allow to be used on property they own and/or manage. WS may also be requested to participate in disease surveillance and monitoring in the event of a disease outbreak or potential outbreak in a mammal population. The EA also addressed the need for action associated with mammal damage occurring on properties owned or managed by the TVA.

SCOPE OF ANALYSES IN THE EA

The EA evaluates the need for action to manage damage associated with mammals, the potential issues associated with mammal damage management, and the environmental consequences of conducting different alternatives to meet the need for action while addressing the identified issues. The EA evaluates meeting the need for action under three alternatives. The methods available for use or recommendation under each of the alternatives evaluated were provided in Appendix B of the EA. The actions evaluated were the use of those methods available under the alternatives and the employment of those methods by WS to manage or prevent damage and threats associated with mammals. The standard WS Decision Model (Slate et al. 1992) would be the site-specific procedure for individual actions conducted by WS (see WS Directive 2.201).

Issues related to managing damage caused by mammals in Tennessee were initially developed by WS and the TVA in consultation with the Tennessee Wildlife Resources Agency (TWRA). Issues were defined and preliminary alternatives were identified through the scoping process. As part of the scoping process, the EA was made available to the public for review and comment by a legal notice published daily in *The Tennessean* newspaper from October 18, 2012 through October 20, 2012. A notice of availability and the EA were also made available for public review and comment on the APHIS website at http://www.aphis.usda.gov/wildlife_damage/nepa.shtml beginning on October 10, 2012. A letter of availability was also mailed directly to agencies, organizations, and individuals with probable interest in mammal damage management in the State. The public involvement process ended on November 23, 2012.

WS received one comment letter related to the public comment period. The comment letter received during the public involvement process was reviewed for substantive issues and alternatives, which were considered in developing this Decision for the EA. A summary of the comments received and responses to the comments are provided in Appendix A of this Decision.

RELATIONSHIP OF THE EA TO OTHER ENVIRONMENTAL DOCUMENTS

WS has developed a programmatic Final Environmental Impact Statement (FEIS) that addressed the need for wildlife damage management (USDA 1997). The FEIS contains a detailed discussion of the potential impacts to the human environment from methods and techniques employed by WS, including methods used to manage damage associated with mammals.

WS has developed an EA that analyzed the environmental effects of WS' involvement in the funding of and participation in oral rabies vaccination programs to eliminate or stop the spread of raccoon rabies in a number of eastern states (including Tennessee) and gray fox and coyote rabies in Texas (USDA 2005*a*). In addition, the WS program in Tennessee has previously developed an EA to evaluate managing damage associated with mammal species in the State (USDA 2005*b*). Since activities conducted under the previous EA (USDA 2005*b*) were re-evaluated under the EA to address a new need for action and the associated affected environment, the previous EA that addressed mammal damage will be superseded by the analysis in the EA and the outcome of this Decision issued for the EA. The TVA has also prepared a Natural Resources Plan (TVA 2011*a*), as well as, an environmental impact statement (EIS) to assess the Natural Resources Plan (TVA 2011*b*).

AUTHORITY AND COMPLIANCE

WS is authorized by law to reduce damage caused by animals through the Act of March 2, 1931 (46 Stat. 1468; 7 USC 426-426b), as amended and the Act of December 22, 1987 (101 Stat. 1329-331, 7 USC 426c). The TVA is a federal corporation created by an Act of Congress in May 18, 1933 [48 Stat. 58-59, 16 USC Sec. 831, as amended] that provides electricity to 9 million people, businesses, and industries, and manages 293,000 acres of public land and 11,000 miles of reservoir shoreline in the Tennessee Valley Region. The TVA also provides flood control, navigation, land management, and recreation for the Tennessee River system. Management of mammal species in the State is the responsibility of the TWRA. As the agency with authority for the management of mammals, the TWRA was consulted during the development of the EA and provided input to ensure an interdisciplinary approach according to the National Environmental Policy Act (NEPA) and agency mandates, policies, and regulations.

The EA and this Decision ensures WS' actions comply with the NEPA, with the Council on Environmental Quality guidelines (40 CFR 1500), and with APHIS' NEPA implementing regulations (7 CFR 372). All activities, including disposal requirements, would be conducted consistent with: 1) the Endangered Species Act of 1973, 2) the Federal Insecticide, Fungicide, and Rodenticide Act, 3) the Clean Water Act, 4) Food Security Act, 5) applicable Executive Orders, and 6) applicable Federal, State, and local laws, regulations, and policies, including WS' Directives.

DECISIONS TO BE MADE

Based on the scope of the EA, the decisions to be made are: 1) should WS conduct mammal damage management to alleviate damage to agriculture, property, natural resources, and threats to human safety, 2) should WS conduct disease surveillance and monitoring in mammal populations when requested by the TWRA and other agencies, 3) should WS implement an integrated methods strategy, including technical assistance and direct operational assistance, to meet the need associated with mammal damage in Tennessee, 4) if not, should WS attempt to implement one of the alternatives to an integrated damage management strategy as described in the EA, and 5) would the proposed action or the alternatives result in significant effects to the human environment requiring the preparation of an EIS.

AFFECTED ENVIRONMENT

Mammal damage or threats of damage can occur statewide in Tennessee wherever those mammal species occur. However, mammal damage management would only be conducted by WS when requested by a landowner or manager and only on properties where a cooperative service agreement or other comparable document was signed between WS and a cooperating entity. Upon receiving a request for assistance, activities could be conducted on federal, State, tribal, municipal, and private properties in Tennessee. Areas where damage or threats of damage could occur include, but would not be limited to agricultural fields, vineyards, orchards, farmyards, dairies, ranches, livestock operations, aquaculture facilities, fish hatcheries, grain mills, grain handling areas, railroad yards, waste handling facilities, industrial sites, natural resource areas, park lands, and historic sites; state and interstate highways and roads; railroads and their right-of-ways; property in or adjacent to subdivisions, businesses, and industrial parks; timberlands, croplands, and pastures; private and public property where burrowing mammals cause damage to structures, dikes, ditches, ponds, and levees; public and private properties in rural/urban/suburban areas where mammals cause damage to landscaping and natural resources, property, and are a threat to human safety through the spread of disease. The area would also include airports and military airbases where mammals pose a threat to human safety and to property; areas where mammals negatively affect wildlife, including T&E species; and public property where mammals were negatively affecting historic structures, cultural landscapes, and natural resources.

In addition, activities could occur at facilities owned or managed by the TVA when those mammal species addressed in the EA cause damage or pose threats of damage, including the 48 TVA power generation facilities, 261 TVA electrical substations, or along any of the 10,200 circuit miles of transmission lines and right-of-way easements owned by the TVA in Tennessee. Mammal damage management activities could also be conducted on recreational, natural, or cultural lands owned or managed by the TVA, including 21 reservoirs with more than 7,500 miles of shoreline, and 175,000 acres of shore-land and reservoir property and various other land rights along and over most the Tennessee River and its tributaries.

ISSUES ASSOCIATED WITH MAMMAL DAMAGE MANAGEMENT ACTIVITIES

Issues related to mammal damage management in Tennessee were defined and preliminary alternatives were identified by WS and the TVA and through consultation with the TWRA. The EA was also made available to the public for review and comment through notices published in local media and through direct notification of potentially interested parties.

Chapter 2 of the EA describes in detail the issues considered and evaluated in the EA (USDA 2012). The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) with each alternative evaluated in the EA relative to the impacts on those major issues:

- Issue 1 - Effects of Mammal Damage Management Activities on Target Mammal Populations
- Issue 2 - Effects of Mammal Damage Management Activities on Non-target Wildlife Species Populations, Including T&E Species
- Issue 3 - Effects of Mammal Damage Management Activities on Human Health and Safety
- Issue 4 - Effects of Mammal Damage Management Activities on the Socio-cultural Elements of the Human Environment
- Issue 5 - Humaneness and Animal Welfare Concerns of Methods
- Issue 6 - Effects of Mammal Damage Management Activities on the Regulated Harvest of Mammals
- Issue 7 - Effects of Beaver Removal and Dam Manipulation on the Status of Wetlands in the State

ISSUES CONSIDERED BUT NOT ANALYZED IN DETAIL WITH RATIONALE

In addition to those issues analyzed in detail, several issues were identified during the development of the EA but were not considered in detail. The rationale for the decision not to analyze those issues in detail is discussed in the EA. Those issues not analyzed in detail were:

- Appropriateness of Preparing an EA (Instead of an EIS) For Such a Large Area
- WS' Impact on Biodiversity
- A Loss Threshold Should Be Established Before Allowing Lethal Methods
- Mammal Damage Management Should Not Occur at Taxpayer Expense
- Cost Effectiveness of Management Methods
- Effectiveness of Mammal Damage Management Methods
- Mammal Damage Should Be Managed By Private Nuisance Wildlife Control Agents
- Effects from the Use of Lead Ammunition in Firearms
- Effects on Human Health from Consumption of Deer Meat Donated by WS
- A Site Specific Analysis Should be Made for Every Location Where Mammal Damage Management Would Occur

DESCRIPTION OF THE ALTERNATIVES

The following three alternatives were developed to respond to the issues identified in Chapter 2 of the EA (USDA 2012). A detailed discussion of the effects of the alternatives on the issues is described in the EA under Chapter 4; below is a summary of the alternatives.

Alternative 1 - Continue the Current Adaptive Integrated Mammal Damage Management Program (No Action/Proposed Action)

The proposed action would continue the current program of employing an integrated damage management approach using available methods, as appropriate, to reduce damage associated with mammals in the State. An integrated methods strategy would be recommended and used, encompassing the use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on people, other species, and the environment. Non-lethal methods would be given preference in the formulation of each damage management strategy, and would be recommended or implemented when practical and effective before recommending or implementing lethal methods. However, non-lethal methods would not always be applied as a first response to each damage problem. The most appropriate response could often be a combination of non-lethal and lethal methods, or there could be instances where application of lethal methods alone would be the most appropriate strategy. Technical assistance provided under this alternative would be similar to technical assistance provided under Alternative 2.

All of the methods addressed in Appendix B of the EA would be available to WS for use to resolve requests for assistance to manage damage associated with mammals in the State. Using the WS Decision model discussed in the EA, WS could employ methods singularly or in combination in an integrated approach to alleviate damage caused by mammals.

Alternative 2 – Mammal Damage Management by WS through Technical Assistance Only

Under the technical assistance only alternative, WS would address every request for assistance with technical assistance only. Technical assistance would provide those persons seeking assistance with information and recommendations on methods and techniques that those cooperators could implement without WS' direct involvement in the action. Technical assistance could be provided through personal or telephone consultations and through site visits. Under this alternative, the immediate burden of resolving threats or damage associated with mammals would be placed on those persons experiencing damage. Those persons could employ those methods recommended by WS, could employ other methods, could seek further assistance from other entities, or could take no further action.

Similar to Alternative 1, those methods described in Appendix B would be available to those persons experiencing damage or threats associated with mammals in the State except for the use of Gonacon™, shooting from aircraft, immobilizing drugs, and euthanasia chemicals. Under this alternative, Gonacon™ would only be available to the TWRA[1], while immobilizing drugs and euthanasia drugs would only be available to the TWRA or appropriately licensed veterinarians. Shooting from aircraft would currently not be available for use by any other entity under this alternative. All other methods described in Appendix B of the EA would be available to those persons experiencing damage.

[1] Gonacon™ is not currently registered for use in the Commonwealth.

Alternative 3 – No Mammal Damage Management Conducted by WS

Under the no involvement alternative, WS would not be involved with any aspect of managing damage caused by mammals in Tennessee. All requests for assistance received by WS would be referred to the TWRA and/or other entities. Most of the methods described in Appendix B of the EA would be available under this alternative. The only methods that would not be available to manage damage caused by mammals under this alternative would be Gonacon™, shooting from aircraft, immobilizing drugs, and euthanasia chemicals. Gonacon™ is not registered for use in Tennessee and if registered would only be available for use by the TWRA under this alternative. Immobilizing drugs and euthanasia chemicals would only be available for use by the TWRA or appropriately licensed veterinarians. Shooting from aircraft would currently not be available for use by any other entity under this alternative. All other methods described in Appendix B of the EA would be available to those persons experiencing damage.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL WITH RATIONALE

Additional alternatives were also evaluated but were not considered in detail in the EA with rationale provided. The alternatives analyzed but not in detail included:

- Non-lethal Methods Implemented Before Lethal Methods
- Use of Non-lethal Methods Only by WS
- Use of Lethal Methods Only by WS
- Trap and Translocate Mammals Only
- Reducing Damage by Managing Mammal Populations through the Use of Reproductive Inhibitors
- Compensation for Mammal Damage
- Short Term Eradication and Long Term Population Suppression
- Bounties
- Trap-Neuter-Release Program for Feral and Free-ranging Cats and/or Dogs

STANDARD OPERATING PROCEDURES FOR MAMMAL DAMAGE MANAGEMENT

The current WS program uses many standard operating procedures. Standard operating procedures were discussed in Chapter 3 of the EA (USDA 2012). Those standard operating procedures would be incorporated into activities conducted by WS under the proposed action alternative (Alternative 1) and when applicable, under the technical assistance alternative (Alternative 2). If the no involvement by WS alternative (Alternative 3) were selected, the lack of assistance by WS would preclude the employment or recommendation of those standard operating procedures addressed in the EA.

ENVIRONMENTAL CONSEQUENCES FOR ISSUES ANALYZED IN DETAIL

The EA analyzed the environmental consequences of each alternative as that alternative related to the issues identified to provide information needed for making informed decisions in selecting the appropriate alternative to address the need for action. The following resource values in Tennessee are not expected to be significantly impacted by any of the alternatives analyzed in the EA: soils, geology, minerals, water quality/quantity, flood plains, wetlands, critical habitats (areas listed in threatened and endangered (T&E) species recovery plans), visual resources, air quality, prime and unique farmlands, aquatic resources, timber, and range. The activities proposed in the alternatives would have a negligible effect on atmospheric conditions including the global climate. Meaningful direct or indirect emissions of greenhouse gases would not occur because of any of the alternatives. Those alternatives would meet the

requirements of applicable laws, regulations, and Executive Orders, including the Clean Air Act and Executive Order 13514.

Chapter 4 of the EA analyzed the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on the major issues identified in the EA. The proposed action/no action alternative served as the baseline for the analysis and the comparison of expected impacts among the alternatives. The analyses also take into consideration mandates, directives, and the procedures of WS, TVA, and the TWRA. The analyses in Chapter 4 of the EA indicated the potential impacts to the quality of the human environment would be similar across the alternatives.

Issue 1 - Effects of Mammal Damage Management Activities on Target Mammal Populations

Under the proposed action, WS could incorporate non-lethal and lethal methods described in Appendix B of the EA in an integrated approach in which all or a combination of methods could be employed to resolve a request for assistance. WS could recommend and operationally employ both non-lethal and lethal methods, as governed by Federal, State, and local laws and regulations under the proposed action. Similarly, WS could recommend the use of non-lethal and/or lethal methods under Alternative 2; however, WS would not provide direct operational assistance.

Non-lethal methods could be used to exclude, harass, and disperse target wildlife from areas where damage or threats were occurring. Non-lethal methods available under the alternatives could disperse or otherwise make an area unattractive to mammals that were causing damage, which could reduce the presence of those species at the site and potentially the immediate area around the site where non-lethal methods were employed. Non-lethal methods would be given preference when addressing requests for assistance under Alternative 1 and Alternative 2. However, non-lethal methods would not necessarily be employed to resolve every request for assistance if deemed inappropriate by WS' personnel using the WS Decision Model, especially in situations where the requesting entity had already attempted to resolve the damage or threats of damage using non-lethal methods. Most non-lethal methods would be used to exclude, harass, and disperse target wildlife from areas where damage or threats were occurring. When effective, non-lethal methods would disperse mammals from the area resulting in a reduction in the presence of those mammals at the site where those methods were employed. Non-lethal methods are generally regarded as having minimal effects on overall populations of wildlife since those species would be unharmed. Non-lethal methods would not be employed over large geographical areas or applied at such intensity that essential resources (*e.g.*, food sources, habitat) would be unavailable for extended durations or over a wide geographical scope that long-term adverse effects would occur to a species' population. The continued use of non-lethal methods often leads to the habituation of wildlife to those methods, which can decrease the effectiveness of those methods.

When employed under the alternatives, lethal methods would often be employed to reinforce non-lethal methods and to remove those animals that have been identified as causing damage or posing a threat to human safety. The use of lethal methods could result in local reductions of animals in the area where damage or threats were occurring. Under the proposed action alternative, WS could be requested to provide direct operational assistance where WS employs lethal methods to remove target species. The number of individuals of target species removed from the population annually by WS using lethal methods would be dependent on the number of requests for assistance received, the number of individuals involved with the associated damage or threat, and the efficacy of methods employed. The levels of estimated annual lethal take of target species addressed in the EA under the proposed action alternative were based on activities that were conducted to address previous requests for assistance. In addition, the estimated annual lethal take levels were based on receiving future requests for assistance and the efforts of WS to address those requests for assistance.

Mammals that could be taken by WS under the proposed action could be taken by those persons experiencing damage or threats in the absence of WS' direct involvement under the other alternatives since the take of mammals can occur when a permit has been issued by the TWRA, when required. In addition, mammals could be lethally taken to alleviate damage or reduce threats during the regulated hunting and/or trapping seasons in the State. Since the lack of WS' direct involvement does not preclude the lethal take of mammals by those persons experiencing damage or threats, WS' involvement in the taking of those animals under the proposed action would not be additive to the number of animals that could be taken by other entities in the absence of WS' involvement. The number of mammals taken annually would likely be similar across the alternatives, since the take of mammals could occur even if WS was not directly involved with providing assistance under Alternative 2 and Alternative 3. Those activities proposed, including the proposed take of mammals, under Alternative 1 would not be additive to the number of animals that could be taken by other entities under the other alternatives despite the lack of WS' involvement.

In addition, most non-lethal and lethal methods available for resolving damage or threats associated with mammals would be available under any of the alternatives. Gonacon™, shooting from aircraft, immobilizing drugs, and euthanasia chemicals would be the only methods that would not be available under all of the alternatives. Based on the evaluation in the EA (USDA 2012), the availability of Gonacon™, shooting from aircraft, immobilizing drugs, and euthanasia chemicals under the proposed action alternative would not pose significant environmental risks when used by trained WS personnel and in accordance with their use guidelines.

Based on those quantitative and qualitative parameters addressed in the EA, the proposed levels of take for each mammal species addressed under the proposed action alternative (Alternative 1) would be considered of low magnitude when compared to population trend data, population estimates, and/or harvest data. The number of mammals lethally taken annually under the alternatives would likely be similar since the take of mammals could occur despite no involvement by WS. WS does not have the authority to regulate the number of mammals taken annually by other entities.

In addition, based on the levels of take that have occurred previously by WS and by other entities, the cumulative take levels addressed would also be of low magnitude when compared to those quantitative and qualitative parameters addressed in the EA. The permitting of take by the TWRA ensures that cumulative take levels would occur within allowable levels to maintain species' populations and meet population objectives for each species.

Issue 2 - Effects of Mammal Damage Management Activities on Non-target Wildlife Species Populations, Including T&E Species

Another issue often raised is the potential impacts to populations of wildlife that could be taken as non-targets during damage management activities. While efforts would be made to minimize the risks of lethally taking non-target wildlife, the potential does exist for the unintentional take of non-targets during damage management activities.

The non-targets taken previously by WS are representative of non-targets that could be lethally taken by WS under the proposed action alternative. Although additional species of non-targets could be lethally taken by WS, take of individuals from any species is not likely to increase substantively above the number of non-targets taken annually by WS during previous damage management activities. In addition, many of the species lethally taken or live-captured from FY 2006 through FY 2011 are also considered target species in the EA and the level of take analyzed for each species under Issue 1 includes non-target take that could occur by WS.

The capture and limited lethal take that could occur as part of other damage management activities are further addressed in the ORV program EA (USDA 2005*a*). However, non-targets captured and lethally taken by WS as part of those damage management activities were also addressed in the EA to ensure a cumulative evaluation of potential effects on non-target populations. Therefore, the take of those species was evaluated cumulatively under Issue 1, including take that could occur when a species was considered a target or non-target.

Under the no involvement by WS alternative, WS would not be directly involved with any aspect of managing damage associated with mammals; therefore, no direct impacts to non-targets would occur from WS. Under the technical assistance only alternative, WS could provide information on the proper use of methods and provide demonstration on the use of methods but would not be directly involved with using methods to alleviate mammal damage or threats. Similar to the no WS involvement alternative, under the technical assistance alternative, if methods were applied as intended and with regard for non-target hazards by other entities, those methods would not result in the decline of non-target species' populations. If requestors were provided technical assistance but did not implement any of the recommended actions and took no further action, the potential impacts to non-targets would be lower compared to the proposed action. If those persons requesting assistance implemented recommended methods appropriately and as instructed or demonstrated, the potential impacts to non-targets would be similar to the proposed action. Methods or techniques not implemented as recommended or used inappropriately would likely increase risks to non-targets. When employing direct operational assistance under the proposed action alternative, WS could employ methods and use techniques that would avoid non-target take as described in Chapter 3 of the EA under the standard operating procedures.

The ability to reduce damage and threats caused by mammals would be variable and would be based upon the skills and abilities of the person implementing damage management actions under Alternative 2 and Alternative 3. If those methods available were applied as intended, risks to non-targets would be minimal to non-existent. If methods available were applied incorrectly or applied without knowledge of wildlife behavior, risks to non-target wildlife would be higher under any of the alternatives. If frustration from the lack of available assistance under Alternative 2 and Alternative 3 caused those persons experiencing mammal damage to use methods that were not legally available for use, risks to non-targets would be higher under those alternatives. People have resorted to the use of illegal methods to resolve wildlife damage that have resulted in the lethal take of non-target wildlife. Under the proposed action alternative, those persons could request direct operational assistance from WS to reduce damage and threats occurring, which would increase the likelihood that non-target species would be unaffected by damage management activities.

WS reviewed those T&E species listed in the State during the development of the EA (see Appendix C and Appendix D in the EA). WS determined that activities conducted pursuant to the proposed action would not likely adversely affect those species listed in the State by the United States Fish and Wildlife Service (USFWS) nor their critical habitats. In addition, WS determined that the proposed damage management program would not adversely affect any of the species listed by the TWRA and the Tennessee Department of Environment and Conservation (TDEC) in the State. The USFWS, the TWRA, and the TDEC have concurred with WS' determination. WS would consult with the USFWS and the TWRA prior to the manipulation of water levels associated with beaver dams that occur east of the Tennessee River (see Appendix F of the EA).

Issue 3 - Effects of Mammal Damage Management Activities on Human Health and Safety

The threats to human safety from methods available would be similar across the alternatives since those methods would be available across the alternatives. However, the expertise of WS' employees in using those methods available likely would reduce threats to human safety since WS' employees would be

trained and knowledgeable in the use of those methods. If methods were used incorrectly or without regard for human safety, risks to human safety would increase under any of the alternatives that those methods could be employed. The EA determined that the availability of Gonacon™, shooting from aircraft, immobilizing drugs, and euthanasia chemicals under the proposed action alternative would not increase risks to human safety from the use of those methods under the proposed action alternative (USDA 2012). Although risks do occur from the use of Gonacon™, aircraft, immobilizing drugs, and euthanasia chemicals, when those methods were used in consideration of human safety, the use of those methods would not pose additional risks to human safety beyond those associated with the use of other methods. No adverse effects to human safety occurred from WS' use of methods to alleviate mammal damage in the State from FY 2006 through FY 2011. The risks to human safety from the use of non-lethal and lethal methods, when used appropriately and by trained personnel, would be considered low.

Issue 4 - Effects of Mammal Damage Management Activities on the Socio-cultural Elements of the Human Environment

Mammals often provide aesthetic enjoyment to many people in the State through observations, photographing, and knowing they exist as part of the natural environment. Methods available that could be employed under each of the alternatives would result in the dispersal, exclusion, or removal of individuals or small groups of mammals to resolve damage and threats. Therefore, the use of methods often results in the removal of mammals from the area where damage was occurring or the dispersal of mammals from an area. Since methods available for use to manage damage would be similar across the alternatives, the use of those methods would have similar potential impacts on the aesthetics of mammals. However, the dispersal and/or lethal take of mammals under the alternatives, even under the proposed action alternative, would not reach a magnitude that would prevent the ability to view mammals outside of the area where damage was occurring. The effects on the aesthetic values of mammals would therefore be similar across the alternatives and would be minimal.

Issue 5 - Humaneness and Animal Welfare Concerns of Methods

The issue of humaneness was also analyzed in relationship to methods available under each of the alternatives. Since many methods addressed in Appendix B of the EA would be available under all the alternatives, the issue of method humaneness would be similar for those methods across all the alternatives. As stated previously, Gonacon™, shooting from aircraft, immobilizing drugs, and euthanasia chemicals would be the only methods that would not be available to all entities under the alternatives. The ability of WS to provide direct operational assistance under the proposed action alternative would ensure methods were employed by WS as humanely as possible. Under the other alternatives, methods could be used by other entities inhumanely if used inappropriately or without consideration of mammal behavior. However, the efficacy of methods employed by a cooperator would be based on the skill and knowledge of the requestor in resolving the threat to safety or damage situation despite WS' demonstration. A lack of understanding of the behavior of mammals or improperly identifying the damage caused by mammals along with inadequate knowledge and skill in using methodologies to resolve the damage or threat could lead to incidents with a greater probability of being perceived as inhumane under Alternative 2 and Alternative 3. Despite the lack of involvement by WS under Alternative 3 and WS' limited involvement under Alternative 2, those methods perceived as inhumane by certain individuals and groups would still be available to the public to use to resolve damage and threats caused by mammals.

Issue 6 - Effects of Mammal Damage Management Activities on the Regulated Harvest of Mammals

Hunting and/or trapping seasons in the State exist for most of the mammal species addressed in the EA. Those species addressed in this EA that have established hunting and/or trapping seasons include beaver,

muskrat, nutria, woodchuck, cottontail rabbit, black bear, raccoon, long-tailed weasel, mink, striped skunk, spotted skunk, coyote, gray fox, red fox, bobcat, opossum, white-tailed deer, and elk. WS would have no impact on the ability to harvest those species during the annual hunting and/or trapping seasons under Alternative 2 and Alternative 3 since WS would not be directly involved with managing damage associated with those species. However, resource/property owners may remove mammals under permits issued by the TWRA, when required, resulting in impacts similar to the proposed action alternative under Alternative 2 and Alternative 3. The recommendation of non-lethal methods could disperse or exclude mammals from areas under any of the alternatives, which could limit the ability of those persons interested to harvest mammals in the damage management area. However, the populations of mammals would be unaffected directly by WS under the technical assistance alternative (Alternative 2) and the no involvement alternative (Alternative 3). The TWRA could continue to regulate mammal populations through adjustments in allowed take during the regulated harvest season and through permits to manage damage or threats of damage.

The magnitude of lethal take addressed in the proposed action would be low when compared to the mortality of those mammal species from all known sources. When WS' proposed take of mammals was included as part of the known mortality of mammals and compared to the best population information available for those species, the impact on a species' population was below the level of removal required to lower population levels. The TWRA would determine the number of mammals taken annually through the issuance of permits, when required, and by adjusting allowed take during the harvest seasons.

With oversight by the TWRA, the number of mammals taken by WS would not limit the ability of those persons interested to harvest mammals during the regulated season. All take by WS would be reported to the TWRA annually to ensure take by WS was incorporated into population management objectives established for mammal populations. Based on the limited take proposed by WS and the oversight by the TWRA, WS' take annually would have no effect on the ability of those persons interested to harvest mammals during the regulated harvest season.

Issue 7 – Effects of Beaver Removal and Dam Manipulation on the Status of Wetlands in the State

If a beaver dam is not breached and water is allowed to stand, hydric soils and hydrophytic vegetation may eventually form. This process can take anywhere from several months to years depending on pre-existing conditions. Hydric soils are those soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions. In general, hydric soils form much easier where wetlands have preexisted. Hydrophytic vegetation includes those plants that grow in water or on a substrate that is at least periodically deficient in oxygen because of excessive water content. If these conditions are met, then a wetland has developed that would have different wildlife habitat values than an area that has been more recently impounded by beaver dam activity.

The intent of most dam breaching is not to drain established wetlands. With few exceptions, requests from public and private individuals and entities that WS receives involve dam breaching to return an area back to its pre-existing condition shortly after the dam was created. If the area does not have hydric soils, it usually takes many years for them to develop and a wetland to become established. The regulatory definition of a wetland (see 40 CFR 232.2) is "*...areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*"

Under the proposed action alternative, WS could recommend and/or implement methods to manipulate water levels associated with water impounded by beaver dams to alleviate flooding damage. If the technical assistance alternative was selected, WS could recommend methods to people requesting

assistance that could result in the manipulation of water levels associated with water impounded by beaver dams. WS would not be involved with any aspect of activities associated with beaver dams under the no involvement by WS alternative. Methods that would generally be available under all the alternatives would include explosives, exclusion devices, and water flow devices (see Appendix B of the EA for additional information). However, the availability to breach or remove beaver dams using explosives would be limited under Alternative 2 and Alternative 3, since the property owner or manager seeking to remove or breach a dam would be required to locate a person certified to use explosives to conduct the work. In addition, the use of backhoes or other mechanical methods could be employed by property owners or managers to remove or breach beaver dams under any of the alternatives; however, WS would not operationally employ backhoes or other large machinery to remove or breach dams.

Most beaver dam removal by WS would be exempt from regulation under Section 404 of the CWA as stated in 33 CFR Part 323 or may be authorized under the United States Army Corps of Engineers Nationwide Permit System in 33 CFR Part 330. However, the breaching of some beaver dams can trigger certain portions of Section 404 that require landowners to obtain permits from the United States Army Corps of Engineers. WS' personnel would determine the proper course of action upon inspecting a beaver dam impoundment (see Appendix E of the EA). The activities of WS to manage flooding damage by manipulating beaver dams would not be expected to have any cumulative adverse effects on wetlands in Tennessee when conducted in accordance with the Clean Water Act and the Swampbuster provision of the Food Security Act.

CUMULATIVE IMPACTS OF THE PROPOSED ACTION

No significant cumulative environmental impacts were identified from any of the three alternatives, including the proposed action. Under the proposed action, the lethal removal of mammals by WS would not have significant impacts on statewide mammal populations when known sources of mortality are considered. No risk to public safety was identified when activities are provided and expected by requesting individuals under Alternative 1 and Alternative 2 since only trained and experienced personnel would conduct and/or recommend damage management activities. There is a slight increased risk to public safety when persons who reject assistance and recommendations conduct their own activities under Alternative 2, and when no assistance is provided under Alternative 3. However, under all of the alternatives, those risks would not be to the point that the effects would be significant. The analysis in the EA indicates that an integrated approach to managing damage and threats caused by mammals would not result in significant cumulative effects on the quality of the human environment.

DECISION AND RATIONALE

Based on the analyses in the EA of the alternatives developed to address those issues, including individual and cumulative impacts of those alternatives, the following decision has been reached:

Decision

I have carefully reviewed the EA prepared to meet the need for action. I find the proposed action alternative (Alternative 1) to be environmentally acceptable, addressing the issues and needs while balancing the environmental concerns of management agencies, landowners, advocacy groups, and the public. The analyses in the EA adequately addresses the identified issues, which reasonably confirm that no significant impact, individually or cumulatively, to wildlife populations or the quality of the human environment are likely to occur from the proposed action, nor does the proposed action constitute a major federal action. Therefore, the analysis in the EA does not warrant the completion of an EIS.

Based on the analyses in the EA, the issues identified are best addressed by selecting Alternative 1 (proposed action/no action) and applying the associated standard operating procedures discussed in Chapter 3 of the EA. Alternative 1 successfully addresses (1) mammal damage management using a combination of the most effective methods and does not adversely impact the environment, property, human health and safety, target species, and/or non-target species, including T&E species; (2) it offers the greatest chance of maximizing effectiveness and benefits to resource owners and managers; (3) it presents the greatest chance of maximizing net benefits while minimizing adverse effects to public health and safety; and (4) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of those issues are considered. Further analysis would be triggered if changes occur that broaden the scope of damage management activities in the State, that affect the natural or human environment, or from the issuance of new environmental regulations. Therefore, it is my decision to implement the proposed action/no action alternative (Alternative 1) as described in the EA.

Finding of No Significant Impact

Based on the analyses provided in the EA, there are no indications that the proposed action (Alternative 1) would have a significant impact, individually or cumulatively, on the quality of the human environment. I agree with this conclusion and therefore, find that an EIS should not be prepared. This determination is based on the following factors:

1. Mammal damage management, as conducted by WS in the State, would not be regional or national in scope.

2. The proposed action would pose minimal risk to public health and safety. Based on the analyses in the EA, the methods available would not adversely affect human safety based on their use patterns and standard operating procedures.

3. There were no unique characteristics such as parklands, prime farmlands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. WS' standard operating procedures and adherence to applicable laws and regulations would further ensure that WS' activities would not harm the environment.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to mammal damage management, this action is not highly controversial in terms of size, nature, or effect.

5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.

6. The proposed action would not establish a precedent for any future action with significant effects.

7. No significant cumulative effects were identified through the assessment. The EA analyzed cumulative effects on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State of Tennessee.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.

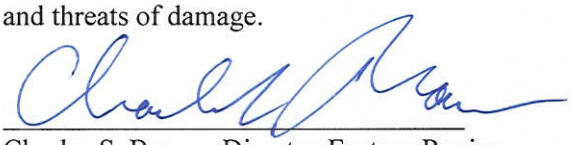
9. WS has determined that the proposed program would not adversely affect any federally listed T&E species currently listed in the State and the USFWS has concurred with WS' determination. In addition, WS has determined that the proposed activities would not adversely affect State-listed species.

10. The proposed action would comply with all applicable federal, State, and local laws.

11. No significant cumulative effects were identified by this assessment or other actions implemented or planned within the area.

Rationale

The rationale for this decision is based on several considerations. This decision takes into account public comments, social/political and economic concerns, public health and safety, and the best available science. The foremost considerations are that: 1) mammal damage management would only be conducted by WS at the request of landowners/managers, 2) management actions would be consistent with applicable laws, regulations, policies and orders, and 3) no adverse effects to the environment were identified in the analysis. As a part of this Decision, the WS program in Tennessee would continue to provide effective and practical technical assistance and direct management techniques that reduce damage and threats of damage.



12/14/12

Charles S. Brown, Director-Eastern Region
USDA/APHIS/WS
Raleigh, North Carolina

Date

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APPENDIX A

RESPONSES TO COMMENTS ON THE ENVIRONMENTAL ASSESSMENT: MAMMAL DAMAGE MANAGEMENT IN TENNESSEE

During the public involvement process for the EA, WS received one comment letter. WS has reviewed the comment letter to identify additional issues, alternatives, and/or concerns that were not addressed in the EA. Those comments received during the public involvement process are summarized below along with WS' response to those comments.

Comment 1 – It is unnecessary to kill wild animals to resolve damage

An alternative evaluating the use of only non-lethal methods was considered during the development of the EA, but was not analyzed in detail for the reasons provided in Section 3.2 of the EA. Under all the alternatives, preference would be given to the use and recommendation of non-lethal methods by WS when practical and effective (see WS Directive 2.201). WS' employees would use the WS Decision Model to determine which methods were practical and effective at reducing damage or threats of damage. In some cases, the use of lethal methods could be determined to be the most practical and effective way of reducing damage to the level requested. When lethal methods were determined to be appropriate, WS would employ those methods in the most humane way possible that minimizes the stress and pain to the animal. Similarly, when making recommendations for the use of lethal methods, WS would recommend those methods be employed in the most humane way possible.

Comment 2 – EA should be revised; an EIS should be prepared

The intent in developing the EA was to determine if the alternatives would potentially have significant individual and/or cumulative impacts on the quality of the human environment that would warrant the preparation of an EIS. The EA addresses impacts associated with managing mammal damage and threats to human safety in Tennessee to analyze individual and cumulative impacts and to provide a thorough analysis. Section 4.1 of the EA analyzes the environmental consequences of each alternative in comparison to determine the extent of actual or potential impacts on the issues. The proposed action/no action alternative (Alternative 1) served as the baseline for the analysis and the comparison of expected impacts among the alternatives. Section 4.2 of the EA evaluated the cumulative impacts of the proposed action alternative by each of the issues analyzed in detail.

No cumulative adverse effects have been identified from program activities implemented over time based on the analyses contained in the EA. The number of mammals removed by WS has been and would continue to be a small component of the statewide populations of those species. WS' activities have been conducted on a small portion of the land area of the State and although a decline in the number of those mammal species targeted at a specific location could occur from WS' activities, those activities would not reach a level where populations would be adversely affected from those actions.

The methods described in Appendix B of the EA all have a high level of selectivity and can be employed using standard operating procedures to ensure minimal impacts to non-targets species. Based on the methods available to resolve damage and damage threats, WS does not anticipate the number of non-targets taken to reach a magnitude where declines in those species' populations would occur. Therefore, take of non-targets would not cumulatively affect the populations of non-target species.

WS has received no reports or documented any adverse effects to human safety from damage management activities targeting mammals conducted by WS from the 2006 federal fiscal year through the 2011 federal fiscal year. Personnel employing methods would continue to be trained to be proficient in

the use of those methods to ensure the safety of the applicator and to the public. Based on the use patterns of methods, those methods would not cumulatively affect human safety. WS employs methods as humanely as possible by applying measures to minimize pain and that allow wildlife captured to be addressed in a timely manner to minimize distress. Through the establishment of WS' Directives and standard operating procedures that guide WS in the use of methods to address damage, the cumulative effects on the issue of method humaneness would be minimal.

Population objectives would continue to be established and enforced by the TWRA. Therefore, WS would have no direct effect on the status of mammal populations since all take by WS occurs at the discretion of the TWRA. Since those persons seeking assistance could remove mammals from areas where damage was occurring when authorized by the TWRA, WS' involvement would have no effect on the aesthetic value of those species in the area where damage was occurring. When the take of those species has been authorized by the TWRA to a property owner and/or manager that is experiencing damage caused by those species, the removal of those species under that authority would likely occur whether WS was involved with taking those individuals or not. Although responding to requests for assistance could provide benefit to requesters by reducing damages or reducing the risks of disease transmission, those benefits would not reach a magnitude of significance that would warrant the preparation of an EIS based on the limited scope of activities proposed.

Comment 3 - EA failed to analyze an alternative that would require all non-lethal methods be exhausted before using lethal methods to resolve damage

The comment indicated that WS should have evaluated an alternative whereby "*all*" non-lethal methods available would be employed prior to the use of lethal methods. However, the comment continues by stating that not "*all*" non-lethal methods would have to be employed under the alternative before lethal methods were employed. An alternative that would employ non-lethal methods before lethal methods was considered in the EA but was not analyzed in detail (see Section 3.2 of the EA). WS' proposed alternative as outlined in the EA would be similar to a non-lethal before lethal alternative because WS encourages and considers the use of non-lethal methods before lethal methods (see WS Directive 2.101). Adding a non-lethal before lethal alternative and the associated analysis would not add additional information to the analysis for the public or decision maker. WS recognizes that the most effective approach to resolving wildlife damage would be to use an integrated approach that would employ several damage management methods (non-lethal and/or lethal) simultaneously or sequentially. If the requester had already employed non-lethal methods or if the mammals had habituated to scare tactics, repellents, or other non-lethal dispersal techniques, WS would not consider continuing to implement those techniques because they had not proven effective in those situations.

Comment 4 – EA overlooks or omits recent and topical science findings on new technologies and advances in methods, which is reflected by the referral of the EA to the 1994 Programmatic EIS and the WS' Decision Model

The methods available for use under each of the alternatives were discussed in Appendix B of the EA and their use was further discussed in Chapter 4 of the EA. The National Wildlife Research Center (NWRC) functions as the research unit of WS by providing scientific information and the development of methods for wildlife damage management, which are effective and environmentally responsible. Research biologists with the NWRC work closely with wildlife managers, researchers, and others to develop and evaluate methods and techniques for managing wildlife damage. For example, research biologists from the NWRC were involved with developing and evaluating the reproductive inhibitor known under the trade name of Gonacon™, which is a newly developed method discussed in the EA for use to manage damage associated with white-tailed deer. Therefore, WS has a dedicated unit for the research and development of new methods and incorporates those methods into activities when deemed practical and

effective using the WS' Decision Model. It is the policy of WS to incorporate the Decision Model into agency decision-making when evaluating and responding to requests for assistance (see WS Policy 2.201).

Comment 5 - WS should revise the 1994 Programmatic EIS and the WS' Decision Model

WS' personnel receive requests for assistance that encompass a broad range of requests for managing wildlife damage. Some requests for assistance are relatively simply with straightforward solutions. In other cases, more challenging solutions may be required to resolve requests for assistance, which could require that coordinated and cooperative efforts occur between many parties. The decision-making process must be based on consideration of the specific biologic, sociocultural, economic, physical, and other environmental circumstances associated with a specific request for assistance. When responding to requests for assistance, WS' personnel would use a thought process for evaluating and responding to requests using the WS Decision Model (see WS Directive 2.201) that was described by Slate et al. (1992). WS' personnel would evaluate the appropriateness of strategies, and methods would be evaluated for their availability (*e.g.*, legal and administrative) and suitability based on biological, economic, environmental and social considerations. Following the thought process, the methods deemed practical for the situation would be developed into a management strategy. The WS Decision Model is designed to serve as a useful management tool and meaningful communication instrument. Therefore, the Decision Model remains applicable to responding to requests for assistance with managing damage associated with wildlife. It is the policy of WS to incorporate the Decision Model into agency decision-making when evaluating and responding to requests for assistance (see WS Directive 2.201).

Comment 6 – WS should not "tier-back" to prior environmental impact statements

The EA is not tiered to any environmental impact statements. As was stated in the EA, individual wildlife damage management projects conducted by the WS program could be categorically excluded from further analysis under the National Environmental Policy Act (NEPA), in accordance with APHIS implementing regulations for the NEPA (7 CFR 372.5(c), 60 FR 6000-6003). However, the purpose of the EA was to evaluate cumulatively the individual projects conducted by WS to manage damage and threats to agricultural resources, property, natural resources, and threats to humans caused by those mammal species identified previously. The EA assisted in determining if the proposed cumulative management of mammal damage could have a significant impact on the environment for both humans and other organisms based on previous activities conducted and based on the anticipation of receiving additional requests for assistance. Therefore, the EA provides for a more focused analysis pursuant the NEPA to evaluate a full range of alternatives to address local issues.

Comment 7 – EA fails to follow WS' Directives for holistic and integrated planning

The commenter states the EA fails to follow WS Directives, specifically WS Directive 1.201, Directive 2.105, and Directive 2.201; however, the commenter provides no specific examples of how the EA fails to comply with those directives. WS Directive 1.201 pertains to the mission and philosophy of the WS program. WS Directive 2.105 addresses an integrated methods approach to addressing wildlife damage. WS Directive 2.201 depicts the WS Decision Model.

As stated throughout the EA, WS' directives define program objectives and provide guidance to WS' personnel when conducting official activities. Each WS' employee is responsible for compliance with all applicable laws, regulations, and policies, including the directives of WS. The mission and philosophy of WS (see WS Directive 1.201) was discussed primarily in Chapter 1 of the EA. The integration of methods (see WS Directive 2.105) as part of the alternatives was discussed in Chapter 3 and Chapter 4 of

the EA. The use of the WS Decision Model (see WS Directive 2.201) was discussed throughout the EA and was specifically addressed in Section 3.1 of the EA.

Comment 8 – The EA lacks a balanced discussion of subjective factors

The commenter states the EA lacks balance in the discussion of subjective factors, particularly those factors relating to disease transmission and wildlife damage. The commenter also states the EA addressed the highly subjective elements of aesthetics and humaneness but the EA does not equally discuss the perception of people regarding the risks associated with disease transmission and property damage can also be subjective.

However, the need for action discussed in Chapter 1 of the EA provides adequate discussion of the subjective factors associated with disease risks and wildlife damage (see Section 1.2 of the EA). For example, the EA states "[t]*he threshold triggering a request for assistance is often unique to the individual person requesting assistance and can be based on many factors (e.g., economic, social, aesthetics). Therefore, what constitutes damage is often unique to the individual person and damage occurring to one individual may not be considered damage by another individual. However, the use of the term "damage" is consistently used to describe situations where the individual person has determined the losses associated with wildlife is actual damage requiring assistance (i.e., has reached an individual threshold). The term "damage" is most often defined as economic losses to resources or threats to human safety; however, "damage" could also be defined as a loss in the aesthetic value of property and other situations where the behavior of wildlife is no longer tolerable to an individual person.*"

The EA also states in regards to disease threats "...[i]*ndividuals or property owners that request assistance with mammals frequently are concerned about potential disease risks but are unaware of the types of diseases that can be transmitted by those animals. In those types of situations, assistance is requested because of a perceived risk to human health or safety associated with wild animals living in close association with humans, from animals acting out of character by roving in human-inhabited areas during daylight, or from animals showing no fear when humans are present.*" The EA also states "...[i]*n many circumstances when human health concerns are the primary reason for requesting WS' assistance there may have been no actual cases of transmission of disease to humans by mammals.*" Therefore, the EA provides a balanced discussion of subjective factors of concern to the commenter in Chapter 1 of the EA.

Comment 9 – The EA should better clarify and define how to identify when an animal might "*pose*" a threat of damage or a threat to human safety

Generally, WS conducts damage management associated with wildlife only after they have caused damage. However, the imminent threat of damage or loss of resources is often sufficient for individual actions to be initiated and the need for damage management is often derived from the specific threats to resources. Individuals of a wildlife species have no intent to cause damage. They utilize habitats (*e.g.*, reproduce, walk, forage) where they can find a niche. Both sociological and biological carrying capacities must be considered when resolving wildlife damage problems. The wildlife acceptance capacity, or cultural carrying capacity, is the limit of human tolerance for wildlife or the maximum number of a given species that can coexist compatibly with local human populations. Those phenomena are especially important because they define the sensitivity of a person or community to a wildlife species. For any given damage situation, there are varying thresholds of tolerance exhibited by those people directly and indirectly affected by the species and any associated damage. This damage threshold determines the wildlife acceptance capacity. While the biological carrying capacity of habitat may support higher populations of wildlife, in many cases, the wildlife acceptance capacity is lower or has

been met. Once the wildlife acceptance capacity is met or exceeded, people begin to implement population or damage management to alleviate damage or address threats of damage.

The need for action to manage damage and threats associated with mammals in Tennessee arises from requests for assistance received by WS. Requests for assistance with threats posed by mammals are primarily associated with threats to human safety and natural resources. However, as was discussed in the EA, threats can also occur to other resources. For example, preventing damage and reducing threats to human safety and to property would be the goal of those cooperators requesting assistance at airports in Tennessee given that a potential strike can lead to the loss of human life and considerable damage to property. The issue of establishing a loss threshold before implementing lethal methods was considered during the preparation of the EA, but was not analyzed in detail for the reasons provided in Section 2.3 of the EA.

Comment 10 – No health authority recommends arbitrary lethal removal to control wildlife rabies

As was stated throughout the EA, WS would only conduct activities to resolve damage or threats of damage when requested. In addition, WS would only target those animals causing damage or posing a threat of damage. The EA makes no statements that arbitrary lethal removal would occur to control rabies in wildlife nor makes any claim that any health authority advocates the use of large-scale lethal removal to control rabies in wildlife.

Comment 11 – Responding to aggressive behavior in mammals is the role of local animal care and control agencies, not WS; responding to companion animal issues is not the responsibility of WS

Addressing animals, including aggressive animals and companion animals, occurs within the legal authority of WS. WS would only provide assistance with aggressive animals or companion animals when a request for assistance was received. In some cases, local animal care and control agencies or organizations do not exist or are unable to provide assistance with companion animals or aggressive animals. For example, animal care and control agencies or organizations may not exist or provide assistance in some rural areas or agencies and organizations may only address companion animals (*e.g.*, cats, dogs) but not address other species of mammals. In most cases, the WS program in Tennessee would refer requests for assistance regarding cats and dogs to the appropriate local authorities or organization in areas where those entities exist; however, in some cases, the local agency or organization may request assistance from WS. As stated in Chapter 4 of the EA, in most cases where WS was requested to provide assistance with feral or free-ranging dogs and cats, WS would employ live-capture methods. Once live-captured, WS would transfer custody of the dogs or cats to a local animal control facility. After relinquishing the dogs or cats to a local animal control facility, the care and the final disposition of those animals would be the responsibility of the animal control facility.

Comment 12 – WS should be commend for their Oral Rabies Vaccination program

The WS program appreciates this comment. In an effort to halt the westward spread of the raccoon variant of the rabies virus and to limit the spread of the canine variant from Texas, WS began participating in the distribution of Oral Rabies Vaccination baits (fishmeal polymer containing Raboral V-RG® vaccine [Merial, Athens, Georgia, USA]). Currently, WS participates in the distribution of Oral Rabies Vaccination baits and the surveillance of wildlife rabies vectors in 26 states, including Tennessee. Since the inception of the program in the fall of 2002 through the bait distribution in October 2011, approximately 6,000,311 ORV baits have been distributed in Tennessee. WS' participation in the ORV program is further addressed in a separate EA (USDA 2005) but was addressed in the EA to evaluate potential cumulative effects of activities proposed in the EA and the capturing and releasing of target animals during surveillance activities associated with the ORV program (USDA 2005).

Comment 13 – The EA should address animal welfare standards as well as animal welfare measures, which are generally referred to as animal welfare assessments

The commenter stated the EA should address animal welfare standards and provided several citations that discuss animal welfare measures and animal welfare assessments (*e.g.*, Kirkwood et al. 1994, Sharp and Saunders 2008, Sharp and Saunders 2011).

The humaneness of methods and animal welfare concerns was an issue addressed in detail throughout the EA (see Section 2.2, Section 4.1, and Section 4.2), including standard operating procedures to address humaneness and animal welfare (see Section 3.4). The EA states "*...research has not yet progressed to the development of objective, quantitative measurements of pain or stress for use in evaluating humaneness*." This statement is also supported by the citations provided by the commenter. When discussing the use of welfare assessments, Sharp and Saunders (2008, 2011) stated "[Kirkwood et al. (1994)] *warn that the process of allocating a score to reflect the severity of harm to welfare should be used with great caution due to a number of difficulties with this approach.*" Sharp and Saunders (2008, 2011) also stated "[w]*ith regard to animal suffering,* [Kirkwood et al. (1994)] *take the view that although all mammals and birds have the capacity to suffer the unpleasant sensations of pain or stress, there is insufficient information to grade this suffering*. Although Sharp and Saunders (2008, 2011) attempt to address the use of a humaneness model, they also indicate such a model has several disadvantages. The disadvantages of welfare assessment identified by Sharp and Saunders (2008, 2011) include (1) subjective judgments would have to be made due to the lack of objective data relating to welfare, (2) a humaneness assessment would only provide a grade instead of providing an absolute measure, (3) grades assigned by individual assessors would be based purely on their own subjective opinion, and (4) a model cannot provide how the animal actually feels.

Many of the factors and considerations identified by Sharp and Saunders (2008, 2011) for use in humaneness models, have been addressed through the establishment of best management practices for trapping in the United States (*e.g.*, see International Association of Fish and Wildlife Agencies 1997, Association of Fish and Wildlife Agencies 2006). WS recognizes the value and use of the best management practices for trapping and utilizes those guidelines as a basis for policy formulation (see WS Directive 2.450). As the EA states "[t]*he goal of WS would be to use methods as humanely as possible to effectively resolve requests for assistance to reduce damage and threats to human safety. WS would continue to evaluate methods and activities to minimize the pain and suffering of methods addressed when attempting to resolve requests for assistance*."

Comment 14 – The EA should provide justification for control and stepwise procedures to follow in a comprehensive and holistic wildlife damage management planning process

The standard WS Decision Model (Slate et al. 1992) would be the site-specific procedure for individual actions conducted by WS in the State (see Chapter 3 of the EA for a description of the Decision Model and its application). Decisions made using the model would be in accordance with WS' directives and Standard Operating Procedures (SOPs) described in the EA as well as relevant laws and regulations. In section 3.1 of the EA, WS describes the alternatives in detail, including the methods, procedures, and recommendations that would be available for use to manage damage caused by mammals in Tennessee under those alternatives. The EA further describes the decision-making process used by WS when addressing requests for assistance to manage damage caused by mammals. WS describes strategies employed through an integrated approach to addressing damage caused by mammals, including technical assistance recommendations, direct operational assistance, educational efforts, and the research and development of effective damage management methods. WS further describes decision-making based on community input. WS responds to requests for assistance with a site visit or discussion of the damage

occurring, which defines the extent of the request. Using the decision model, a damage management plan is implemented to achieve the objective of reducing damage or threats of damage. Therefore, the analysis in the EA evaluates the use of methods as though those methods under an alternative would be employed for every request for assistance to evaluate the potential impact parameters of those methods being employed together.

Under the proposed action, an evaluation of all available methods occurs which establishes the maximum potential impact parameters if every method available was employed to resolve every request for assistance. Any use combination of methods (either singularly or collectively) would therefore be below the analyzed maximum potential impact parameters analyzed in the EA.

WS' Decision Model is the implementing mechanism for a damage management program that is adapted to an individual damage situation that allows for the broadest range of methods to be used to address damage or the threat of damage in the most effective, most efficient, and mostly environmentally conscious way available. When a request for assistance is received to resolve or prevent damage caused by mammals, WS conducts site visits to assess damage or threats, identifies the cause of the damage, and applies the decision model described by Slate et al. (1992) to apply methods to resolve or prevent damage using those methods available. The WS' process for providing assistance is defined by the WS Decision Model under the proposed action in the EA.

Comment 15 – Trap-Neuter-Release programs do not pose the logistical barrier the EA portrays

The commenter claims a trap-neuter-release program would not pose a logistical barrier based on such programs routinely trapping and neutering a large volume of animals. However, the commenter provided no specific examples or provided additional information on specific research addressing the logistical issues associated with a trap-neuter-release program.

An alternative implementing a trap-neuter-release program for feral cats and feral dogs was addressed in Section 3.2 of the EA; however, the alternative was not considered in detail for the reasons provided in the EA. The logistical difficulties of implementing a trap-neuter-release program was one consideration when evaluating the likelihood of such a program meeting the need for action addressed in the EA. In many cases, such a program would require animals to be live-captured, transported to animal clinics to perform the procedure, and then transported back to the capture site for release, which increases the risks to handlers of possible disease transmission and increases the costs associated with such programs. The EA also addresses other considerations of a trap-neuter-release program, including the animals continuing to cause damage or posing threats after their release at the site, and the legalities of such programs given the growing evidence that feral cats and dogs prey on native wildlife, including migratory birds and threatened and endangered species. For those reasons, in addition to the difficulties with logistics, a trap-neuter-release alternative was not considered in detail.

Comment 16 – Trap check frequency is vague in the EA

WS complies with all applicable federal, state, and local laws pursuant to WS Directive 2.210. In Tennessee, the TWRA requires all traps to be inspected at least every 36 hours and animals caught must be removed. In most cases, when using methods that involve the live-capture of animals, the WS program in Tennessee would check traps at least once a day.

Comment 17 – WS has improperly reached the conclusion that water flow control devices are not suitable for any site

As stated in the EA, WS could employ or recommend the use of water control devices in beaver dams to manipulate impounded water levels to alleviate flooding damage. As stated in Section 4.1 of the EA, exclusion and water control devices may not be the most effective method for every site. However, the EA does not conclude that the use of water control devices were not suitable for any site. In many cases, WS recommends the installation of water control devices through technical assistance; therefore, the installation and maintenance of the device would be the responsibility of the person requesting assistance.

Comment 18 – Drowning is not euthanasia; all language regarding drowning as a humane method should be removed from the EA

Drowning is not discussed in the EA as a humane method of euthanasia. The issue addressed in the EA regards the use of foothold traps to create drowning sets for aquatic rodent species and the humaneness of drowning. The EA also discusses the considerable debate and disagreement among animal interest groups, veterinarians, wildlife professionals, fur trappers, and nuisance wildlife control specialists on this issue. The debate centers on an uncertainty as to whether the drowning animals are rendered unconscious by high levels of CO_2 and are thus insensitive to distress and pain.

As stated in Section 4.1 of the EA, the American Veterinarian Medical Association identifies drowning as an unacceptable method of euthanasia (Beaver et al. 2001, American Veterinarian Medical Association 2007). Ludders et al. (1999) concluded drowning was not euthanasia based on the animals not dying from CO_2 narcosis. Ludders et al. (1999) showed death during drowning is from hypoxia and anoxia; thus, animals experience hypoxemia. Ludders et al. (1999) concluded that animals that drowned were distressed because of stress related hormones present in the animal.

Comment 19 – The methods available are not selective for target species

As was stated in Section 4.1 of the EA, precautions would be taken to safeguard against taking non-targets during operational use of methods and techniques for resolving damage and reducing threats caused by mammals; however, the use of such methods could result in the incidental lethal take of unintended species. The unintentional take and capture of wildlife species during damage management activities conducted under the proposed action alternative would primarily be associated with the use of body-gripping traps and in some situations, with live-capture methods, such as foothold traps, cage traps, and cable restraints. SOPs discussed in Section 3.3 of the EA were developed to minimize take of non-target wildlife during the use of methods to capture target wildlife. Although the unintentional take of non-targets does occur, the number of non-targets taken would not reach a magnitude where declines in those species' populations would occur (see Section 4.1 and Section 4.2 of the EA).

Comment 20 – WS must employ alternatives to lead ammunition in all activities

The issue associated with the use of ammunition containing lead was considered during the development of the EA but was not analyzed in detail for the reasons provided in the EA (see Section 2.3). As was discussed in the EA, the risks of lead exposure occur primarily from scavengers ingesting bullet fragments from wildlife lethally taken using ammunition containing lead. The retrieval and proper disposal of mammal carcasses pursuant to WS' Directive 2.515 would greatly reduce the risk of scavengers ingesting or being exposed to lead that may be contained within a carcass. To pose a risk to scavengers if a carcass was not retrieved, the carcass would have to be scavenged, the areas of the carcass scavenged would have to contain lead fragments, and if lead fragments were ingested, a sufficient level

would have to be consumed to cause deleterious effects to the scavenger. Therefore, the risks of lead exposure to scavengers would be extremely low and would only occur if a carcass were not retrieved.

Comment 21 – WS should work toward registering Gonacon™ in Tennessee

Gonacon™ is a reproductive inhibitor that is currently registered with the Environmental Protection Agency for use to manage local deer populations; however, Gonacon™ was not registered for use in Tennessee during the development of the EA. If requests for assistance were received where the use of Gonacon™ was appropriate, WS could seek to register the product for use with the Tennessee Department of Agriculture. Requests for assistance where Gonacon™ could be appropriate for use would include those situations where the management of a localized deer population from the use of the reproductive inhibitor could induce a decline in that population through a reduction in the recruitment of fawns into the population by limiting reproductive output of adults.

Comment 22 – WS must only use or recommend ready-to-use rodenticides that are compliant with the Environmental Protection Agency's risk mitigation goals

WS would only employ or recommend for use those rodenticides that were registered for use pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act with the Environmental Protection Agency and were registered for use in the State by the Tennessee Department of Agriculture.

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